Ownership matrix	**RPP-27195**

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1.0 PURPOSE AND SCOPE

(7.1.1, 7.1.2, 7.1.3)

This procedure provides direction for the performance and administration of the Hazard Analysis process implemented by Washington River Protection Solutions, LLC (WRPS).

Every WRPS employee is expected to work safely and to maintain a safe work environment. All WRPS activities are evaluated for potential hazards and a detailed general hazard analysis (GHA) has been performed to ensure employee training and knowledge is sufficient to address routine industrial safety hazards at WRPS facilities. Visitors should be briefed on the general hazards they may be exposed to and controls expected of them as part of their orientation.

When hazards are present beyond those evaluated within the GHA, the Job Hazard Analysis (JHA) process is followed to identify, evaluate, control, and communicate potential hazards associated with performing WRPS activities including but not limited to: facility maintenance, building maintenance, construction activities, facility operations, environmental remediation, subcontractor activities, and service organization support.

Hazard Analysis for activities performed by other Hanford Prime Contractor service organizations (e.g., Fire Systems Maintenance, Refrigerated Equipment Service) are exempt from this process as the hazard analysis is performed in accordance with the prime contractor's work processes as outlined by the TOC contract and statements of work.

Emergency Response Procedures (ERPs) are exempted from having a hazards analysis (JHA or GHA) performed. ERPs are performed by trained and qualified emergency responders under the Emergency Management System (EMS). Hazards and controls associated with emergency actions are evaluated and implemented as part of the EMS process.

2.0 IMPLEMENTATION

This procedure is effective on the date shown in the header.

3.0 RESPONSIBILITIES

Responsibilities are contained within Section 4.0.

4.0 PROCEDURE

With the exception of ERPs, a hazard evaluation is performed for all TOC activities. The GHA evaluates standard industrial and workplace hazards along with employee training and qualifications to ensure that employees have the proper skills and knowledge to safely perform routine work activities. If the hazard evaluation for a work activity determines that all hazards are covered by the GHA, no additional job specific hazard analysis is required.

For radiological work, radiological hazards are evaluated and appropriate controls implemented through the Radiological Work Permit (RWP) process.

The following sections describe:

- The expectations relating to work covered by the GHA

- The hazard analysis process to be taken when hazards beyond those covered by the GHA are present

- Program requirements and administration for WRPS work control documents (procedures and work instructions).

4.1 General Hazards Analysis (applicable to all personnel)

(7.1.3)

The safety policies established at WRPS are intended to ensure a safe working environment for employees, visitors, subcontractors and the public. It is every employee's responsibility to maintain a safe work environment, be aware of hazards in the workplace, and ensure appropriate controls are implemented.

Based on evaluation of employee experience, training, and knowledge, the GHA identifies routine work place hazards where controls are skill based and can be implemented by the individuals performing the work.

The GHA is available through a link on the Safety & Health, and Work Planning & Control Websites.

1. The GHA and associated controls are always in effect and are applicable to all WRPS activities.

2. Information contained in the GHA should be used as appropriate by workers, supervisors, and managers to discuss and identify applicable hazards and controls and required PPE that shall be worn within the work area.

4.2 Conducting a Job Hazard Analysis

When possible, a JHA evaluates all aspects of task performance. This includes an analysis of the hazards associated with performing the task, and also an evaluation of hazards associated with the work area where the activity will be performed (confined space, radiation areas, beryllium controlled areas, etc.). Controls for the hazards are identified and incorporated into the work control documents as appropriate (procedures/work instructions). Because all the hazards associated with the activity are incorporated into the procedure or implemented through appropriate permits, the JHA checklist is not required in the field.

In cases where a technical procedure or work activity can be performed in multiple locations where work area and/or location specific hazards exist, a Standing JHA Checklist may be developed to identify and implement the additional specific controls for that location that is used to supplement the task specific JHA controls that were incorporated into the work control documents.

JHAs for technical procedures capture hazards and controls identified at the time a procedure was developed. Normal procedure change controls and processes provided in TFC-OPS-OPER-C-13 or ATS-310, Section 11.16 ensure new or additional hazards identified are mitigated and necessary controls implemented within the procedure.

The following sources of new hazards may drive changes to a procedure:

- Updates/revisions of the JHA checklist (see Section 4.5)

- Hazards introduced through equipment modifications/upgrades, permanent changes to field conditions that introduce new hazards.

Technical procedures performed in multiple locations will specify in the procedure the requirement for performing a location specific hazard evaluation. As maintenance procedures are performed as part of a Level 2 preventative maintenance work package developed in accordance with TFC-OPS-MAINT-C-02 and TFC-OPS-MAINT-C-12, specifying this requirement within preventative maintenance procedures is not required.

Workplace hazards that may be introduced in the work area following development of the JHA (co-located work activities, radiological conditions, weather conditions, etc.) are evaluated prior to work execution, and appropriate controls implemented per Section 4.2.4.

The general hazards and controls covered by the GHA should not be specified on the JHA checklist or placed in work documents. Specifying general hazard controls in work documents could result in diluting the importance of controls implemented for analyzed hazards specific to the work task or environment.

This section applies to activities where the hazards have been evaluated and are not covered by the GHA and/or a Standing JHA Checklist.

4.2.1 Hazard Analysis for Technical Procedures
(7.1.1, 7.1.2, 7.1.3)

NOTE: This section applies to new and full revisions of technical procedures.

Procedure group

1. Ensure the procedure and site forms (JHA) are drafted and ready for a hazard analysis meeting.

NOTE 1: Other subject matter expert (SME) members for the team are determined by the supervisor and procedure writer based on the work scope, and may include the following. Attachment A of TFC-OPS-OPER-C-13 may be used to assist in identifying appropriate SME involvement.

- Technical authority
- Health physics technician (HPT)
- Environmental representative
- Operations
- Fire protection engineer.

Procedure group/Procedure Champion

2. Schedule a meeting with the following participants:

- Supervisor
- Procedure writer
- Procedure user
- Industrial Safety
- Industrial Hygiene.

Hazard Analysis Team

3. Perform a review and discussion of the procedure to identify potential activity hazards.

a. Use the Job Hazard Analysis Checklist (A-6004-101) to record the hazards, methods, and controls.

- Analyze the hazards using the following hierarchy of controls for mitigating the hazard:
  - Can the hazard be eliminated/reduced or substituted (e.g., different chemical cleaning agent)
  - Can the engineering controls be utilized (e.g., ventilation)
  - Can the administrative controls be utilized (e.g., dose monitoring)
  - Can personal protective equipment (PPE) be used
  - Can a less hazardous way to do the job be found
  - Can the physical conditions that created the hazard be changed
  - Can the sequence or way the procedure is written be modified to a safer alternative
  - Can the need for doing the job or the frequency of doing the job be reduced.

b. If no hazards other than general hazards were identified during the review:

- Record participation in the JHA checklist signature sheet
- Approve the JHA review
- Go to step 12.

OR

4. If required, perform a field walkdown to identify potential field hazards.

   a. If a field walkdown is not conducted, obtain the responsible Level 2 manager approval for a table top, with documented justification on the JHA checklist.

   b. Record participation in the JHA review on the JHA checklist signature sheet.

5. Record participation in the JHA development on the JHA checklist signature sheet.

6. Review to ensure additional hazards are not created due to selected controls (e.g., excessive PPE causing heat exhaustion or heat stress) and conflicts do not exist between the controls established for hazards identified (i.e., PPE requirements for radiological hazards don't conflict with PPE requirements for Industrial Hygiene hazards).

Supervisor/Industrial Safety/Industrial Hygiene Representative(s)

7. Review and approve the JHA checklist ensuring completeness, technical accuracy, and controls identified for activities are appropriate.

Procedure Writer

8. Ensure identified hazards are mitigated by the controls and methods identified on the JHA checklist at the procedure step level.

9. Implement any identified warning(s), caution(s), critical step(s) in accordance with TFC-OPS-OPER-STD-01 or ATS-310, Section 11.16.

10. If the activity requires a permit, form, plan, or PPE determination (e.g., Beryllium Work permit, Confined Space Entry permit, Respiratory Protection form, etc.) ensure the required document is called out appropriately as a prerequisite, specific work step, etc.

NOTE: Maintenance procedures are performed within the bounds of a Level 2 work package developed and performed in accordance with TFC-OPS-MAINT-C-02 and TFC-OPS-MAINT-C-12, specifying this requirement within maintenance procedures is not required.

11. If the procedure is performed in multiple locations (e.g., generic procedures) where work area and/or location specific hazards may differ, identify the need to perform a work area and/or location specific hazard evaluation within the procedure."

12. Retain the approved GHA/JHA checklist in the technical procedure history file.

4.2.2 Job Hazards Analysis for Work Control Documents
(7.1.1, 7.1.2, 7.1.3)

Planner

1. Prepare a list of work activities or a draft/outline of the work document containing tasks to be accomplished.

NOTE: Depending on the complexity of the job, or the number of work groups involved, it may be necessary to conduct initial scoping meeting(s) with representatives of the various work groups to obtain a clear understanding of the work scope.

2. Obtain supervisor, worker, and SME input on the approach or activities to be completed.

Planner/Supervisor/ Industrial Safety/Industrial Hygiene Representative

3. Evaluate the work activity, work location, and identified hazards to determine if the activity falls within the GHA, or a current Standing JHA.

Hazard Analysis Team

4. If additional JHA development is required, perform field walkdowns to identify potential hazards relating to work activities and the work area.

   a. If a field walkdown is not conducted, obtain the responsible Level 2 manager approval for a table top, with documented justification on the JHA checklist.

Required Walkdown Participants

- Supervisor*
- Worker(s)
- Industrial Safety
- Industrial Hygiene.

Other SME Representative as determined by the work scope. Attachment B of TFC-OPS-MAINT-C-01 may be used to assist in identifying appropriate SME involvement, including the following:

- Technical Authority
- Health Physics Technician (HPT)
- Environmental Representative
- Operations
- Fire Protection Engineer
- Subcontractor Safety Representative.

*For Level 3 work packages, either the Supervisor or the Planner may participate.

5. Record participation in the JHA development on the JHA checklist signature sheet.

6. Evaluate the activities to be performed, and identify critical steps and tasks considering the following:

   - Not all work activities have critical tasks
   - Improperly applying the use and identification of critical steps can introduce unnecessary confusion and complexity
   - Controls such as peer review, independent review, checklists, and verification signatures can serve as good administrative controls for critical tasks.

7. Conduct a what-if analysis of critical tasks and hazards using the following hierarchy of controls for mitigating the hazard:

   - Can the hazard be eliminated/reduced or substituted (e.g., different chemical cleaning agent)
   - Can the engineering controls be utilized (e.g., ventilation)
   - Can the Administrative controls be utilized (e.g., dose monitoring)
   - Can the personal protective equipment (PPE) be used (e.g., self-contained breathing apparatus)
   - Can a less hazardous way to do the job be found
   - Can the physical conditions that created the hazard be changed
   - Can the sequence or way the procedure is written be modified to be a safer alternative
   - Can the need for doing the job or the frequency of doing the job be reduced?

Planner/Supervisor/ Industrial Safety Representative/ Industrial Hygiene

8. Finalize the JHA by documenting the results of the hazard identification, hazard analysis, selection of controls, and method of control implementation on the JHA checklist form (A-6004-101) (or equivalent for subcontractors).

9. Review to ensure additional hazards are not created due to selected controls (e.g., excessive PPE causing heat exhaustion or heat stress) and conflicts do not exist between the controls established for hazards identified (i.e., PPE requirements for radiological hazards don't conflict with PPE requirements for industrial hygiene hazards).

NOTE 1: Form A-6004-101 may be copied and used by Subcontractors when unable to access the Hanford Local Area Network (HLAN) to retrieve site forms.

NOTE 2: When work is to be performed by a subcontractor, additional review and concurrence is required by the subcontractor safety representative.

NOTE 3: The approved JHA checklist is used as input to development of the work document.

Supervisor/ Industrial Safety Representative/ Industrial Hygiene

10. Review and approve the JHA Checklist ensuring completeness, technical accuracy, and controls identified for activities are appropriate.

Planner/Supervisor	11.	If the activity requires a permit, form, plan, or PPE determination (e.g., Beryllium Work permit, Confined Space Entry permit, Respiratory Protection form, etc.), ensure the appropriate SME organizations review and approve the document for inclusion in the work document, or that the permit, form, plan, etc. is called out appropriately as a prerequisite, specific work step, etc.
Planner	12.	Retain the approved checklist with the work package. If a checklist is to be used as a Standing JHA Checklist, retain a copy and follow steps outlined in Section 4.2.3.

4.2.3 Standing Job Hazard Analysis Checklist

When possible, the hazards associated with performing a task, and any location specific hazards identified on the JHA are incorporated into the procedure or work document. In cases where a technical procedure or work activity can be performed in different areas where location specific hazards exist, a Standing JHA Checklist may be developed to identify and implement the additional specific controls for that location. As Standing JHA controls are not routinely incorporated into the procedure or work document, they are considered a supplemental work document for that activity and must be reviewed and used in the field. When Standing JHA Checklists are used, field conditions must be reviewed each time the work is performed, and approved controls established if additional hazards are identified.

Planner/Supervisor/ Industrial Safety Representative/ Industrial Hygiene	1.	Evaluate the work activity, work location, and identified hazards to determine if there is a current Standing JHA available for use, or if the activity requires development of a new Standing JHA.
Hazard Analysis Team	2.	If Standing JHA development is required, perform field walkdowns to identify potential hazards relating to the work area.
		a) If a field walkdown is not conducted, obtain the responsible Level 2 manager approval for a table top, with documented justification on the JHA checklist.

Required Walkdown Participants

- Supervisor*
- Worker(s)
- Industrial Safety
- Industrial Hygiene.

Other SME Representative as determined by the work scope. Attachment B of TFC-OPS-MAINT-C-01 may be used to assist in identifying appropriate SME involvement, including the following:

- Technical Authority
- Health Physics Technician (HPT)
- Environmental Representative
- Operations
- Fire Protection Engineer
- Subcontractor Safety Representative.

3. Record participation in the JHA development on the JHA checklist signature sheet.

4. Use the following hierarchy of controls for mitigating identified hazards:

   - Can hazard be eliminated/reduced or substituted?
   - Can engineering controls be utilized (e.g., ventilation)?
   - Can Administrative controls be utilized (e.g., dose monitoring)?
   - Can Personal protective equipment (PPE) be used (e.g., self-contained breathing apparatus)?
   - Can the physical conditions that created the hazard be changed?
   - Can the need for doing the job or the frequency of doing the job be reduced?

Planner/Supervisor/ Industrial Safety Representative/ Industrial Hygiene

5. Finalize the JHA by documenting the results of the hazard identification, hazard analysis, and selection of controls on the JHA checklist (A-6004-101).

6. Review to ensure additional hazards are not created due to selected controls and conflicts do not exist between the controls established for hazards identified (i.e., PPE requirements for radiological hazards don't conflict with PPE requirements for Industrial Hygiene hazards).

Supervisor/Industrial Safety Representative/ Industrial Hygiene	7. Review and approve the JHA checklist ensuring completeness, technical accuracy, and controls identified for activities are appropriate.
	8. Route the approved Standing JHA checklist to Safety programs.
Safety Programs Representative	9. Review the Standing JHA checklist for completeness. a. If complete, assign a Standing JHA tracking number. b. If not complete, contact the originator to resolve issues identified.
	10. Post the Standing JHA Checklist to the WRPS Safety – Health Programs Web Page.
	11. Ensure expired Standing JHA Checklist hyperlinks are removed from the WRPS Safety – Health Programs web page.
Responsible Manager/Procedure Owner	12. Ensure that a review and update of the Standing JHA Checklists is performed and documented by the appropriate Supervisor and SMEs on a biennial basis (every two years).

4.2.4 Field Condition Hazard Evaluation
(7.1.1, 7.1.2, 7.1.3)

Supervisor	1. Conduct a pre-job briefing in accordance with TFC-OPS-MAINT-C-02.
	NOTE: Subcontractors may also use, as a supplemental tool, the Job Safety Analysis (JSA) checklist. Use of the JSA checklist is governed by the subcontractor procedures and controls. When this option is invoked, the content of the JHA checklist and contractor JSA must be consistent.
Worker/Supervisor	2. Prior to starting work activities, evaluate the job site and determine if hazards associated with the task and the work location are consistent with those identified in the work control documents and pre-job briefing (e.g., hazards introduced by co-located work, changes to work area conditions, previously unidentified hazards, etc.) and current environmental conditions (e.g., rain, snow, high/low temperature).
	3. If additional activity, workplace, or environmental hazards are identified, determine and implement the appropriate controls (e.g., work-rest regimen, hard hats, barricades, heat stress mitigation, ice removal, supplemental lighting, etc.).
	4. When required controls and appropriate personal protective equipment have been established, perform work.
	5. Ensure controls remain in place while the hazard(s) exists.

4.3 Methods for Implementation of Controls

Methods of implementation are used to identify how the required hazard controls are to be implemented or identified in the work control documents. In order to effectively communicate the necessary controls to mitigate or eliminate hazards to the workers, the following additional guidelines should be used to select the methods of implementation:

Methods of controls are specified for each identified hazard on the JHA checklist and include the following:

- **Precaution/Limitation/Prerequisite** – Control incorporated into the Precaution/Limitation/ Prerequisite section of the work document.

  The Precaution/Limitation method is selected when the hazard and relating control are general in nature and apply to the entire scope of work.

  Prerequisite is selected if the control must be in place and verified as complete PRIOR to start of work.

- **WARNING/CAUTION**– Specified through a statement in a work document.

  This method is selected when a hazardous condition applies to a specific step in the body of a procedure or work instruction or when a step has been identified as critical.

- **Work Package/Technical Procedure Work Instruction** – Directions provided through incorporating specific steps and step sequencing within a work document.

  This method is selected when the control is established through performance of a sequence of steps.

- **Permit/Plan/Evaluation** – Detailed controls, requirements, or actions are specified in a permit or plan.

  This method is selected when hazard controls are contained in supporting permits or plans required to be generated by another controlling procedure/program.

  Required Permits/Plans/Evaluations should be identified in the procedure or work instruction as a Prerequisite or specific step as appropriate.

  Example: Step number XXX Ensure an Industrial Hygiene plan is approved and available for performance of the work activity.

4.4 Hazard/Control Changes to Approved Job Hazard Analysis Checklists

Changes to the JHA checklist are not required for hazards and controls related to field conditions (e.g., weather, co-located work, etc.) or if additional identified hazards fall within the GHA.

For technical procedures, the normal procedure change control and procedure use process provided in TFC-OPS-OPER-C-13 or ATS-310, Section 11.16 ensure new or additional hazards identified are mitigated and controls implemented.

Changes to work package or standing JHA Checklists may be performed by marking up the original JHA Checklist with the required change, or preparing a new JHA Checklist form describing the additional hazards and controls. The method selected is determined by the number and significance of changes that are required, and the ability for the change to be made in a legible manner.

Supervisor/Planner/ Safety & Health Representative	1.	Prepare the change by marking up the original JHA Checklist or prepare a new JHA Checklist identifying the new/changed hazards and relating controls.
Worker/Supervisor/ Safety & Health Representative	2.	Review the change, ensuring conflicts do not exist.
Supervisor/Safety & Health Representative/SME	3.	If acceptable, the Supervisor, Safety & Health Representative, and any appropriate SMEs must approve the change as documented by initializing by the change(s) and explanation entry in the JHA comments sections.
Supervisor/Planner	4.	Review the other documents (e.g., work document, permit, plan) to determine the need for revision and revise in accordance with the applicable procedure.

4.5 Revisions to the JHA Checklist

Revisions to the JHA Checklist form may be required to address editorial changes (updating form numbers, references, etc.) or to address implementation of additional hazards or specific control. The effect of checklist revisions on field activities will be evaluated, and appropriate direction for implementing the change communicated to the appropriate organizations. Checklist changes typically fall into one of three categories:

- Inconsequential change where no further action is required.
- Changes where the impact on currently approved JHAs is limited, and review or additional controls can be made by pen-and-ink to the JHA and providing the appropriate entry in the JHA comments section.
- Updating currently approved JHAs to the new revision of the checklist.

Supervisor/Industrial Safety Representative/ Industrial Hygiene	1.	Process revisions to the JHA checklist as directed, and as described in this procedure.
	2.	Ensure superseded JHA Checklists are retained in the work document or history file.

5.0 DEFINITIONS

Critical task. An instruction or procedure step, series of steps, or action that, if performed improperly, will cause intolerable or irreversible harm to people, plant, or environment or significantly impact plant operation.

Field Condition Hazard Evaluation. A process of reviewing field conditions and related hazards (e.g., co-located work, weather, changes to facility conditions, etc.) prior to performance of work to ensure adequate controls are in place.

Job Hazard Analysis Checklist. A form (A-6004-101) used to identify the hazards, controls, permits, and personal protective equipment associated with the non-Analytical Laboratory scope of work.

Standing Job Hazard Analysis Checklist. A JHA Checklist developed allowing repetitive performance of a specific scope of work.

6.0 RECORDS
(7.1.3)

The following records are generated in the performance of this procedure:

- Job Hazard Analysis checklist (A-6004-101) (retained with the performance document history/procedure history file)
- Standing JHAs (retained in IDMS).

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.

7.0 SOURCES

7.1 Requirements

7.1.1 10 CFR 851, “Worker Safety and Health Program.”

7.1.2 TFC-PLN-01, “Integrated Safety Management System Plan.”

7.1.3 TFC-POL-16, “Integrated Safety Management System Policy.”

7.2 References

7.2.1 ATS-310, Section 11.16, “Technical Procedure Control Process.”

7.2.2 TFC-BSM-IRM_DC-C-02, “Records Management.”

7.2.3 TFC-OPS-MAINT-C-01, “Tank Operations Contractor Work Control.”

7.2.4 TFC-OPS-MAINT-C-02, “Pre-Job Briefings and Post-Job Reviews.”

7.2.5 TFC-OPS-MAINT-C-12, “Preventive/Predictive Maintenance Administration.”

7.2.6 TFC-OPS-OPER-C-13, “Technical Procedure Control and Use.”

7.2.7 TFC-OPS-OPER-STD-01, “Technical Procedure Format and Preparation Standard.”